

Reading, Writing and Music: Why Music Belongs at the Center of the Curriculum

By Michael Shasberger, D.M.A.
Adams Chair of Music and Worship
Westmont College

The question of music education is a part of a complex mix of priorities in our public education system. Our discussion today will be about those priorities. Priorities that is, not put-downs. There are many choices to be made in examining what should be included in the contemporary curriculum, what society can afford to support and what must be left out given the competitive demand on resources.

I do not seek to diminish the significance of athletics, administration, other academic disciplines, or the challenges of our complex contemporary society. The purpose of my remarks is to assist in the public discourse by reinforcing the understanding of the essential nature of music education (and by association all arts education) in the curriculum of the public, or any other, educational program. The question of what to provide ultimately comes down to priorities and thus it is within my calling to articulate why music education must be seen as at least an equal priority to all other conditions of either adequacy or excellence as we fund, design and implement public policy. The basic essential of this argument is that music one of those factors that must be placed at the core of the educational experience, and one that when lacking guarantees substandard results for the academic unit and the resultant society.

I have lived with these questions for a while. I brought along some tokens of my experience that remind me of various points along the way. I am fortunate to have one of the last Life Credentials issued by the State of California for teaching K–12 music before the state began to issue credentials that require periodic renewal (and the accompanying fees that go with renewal). I brought this little ‘Foot’ pin that I wore on the picket lines for the teacher’s strike of 1977 when we insisted on a fair pay increase without cutting programs like music, and my old Music Educators National Conference membership pin. I am pleased to say that my professional life includes six years in public school teaching, nearly 20 years in preparing others to do so, and 11 in parenting children in the system.

As a teacher asking students to write their philosophy of music education, I encouraged them to avoid the secondary justifications, and focus on the primary purposes of music in our lives, but it is increasingly difficult not to do both as study after study shows the profoundly significant impact of the secondary aspects of music on intellectual and social development. I will nonetheless start with an effort to describe the fundamental nature of the arts and music in the human condition and its corollary place in the essential body of knowledge of our culture, and the educational systems we put in place to preserve and advance that culture.

Go way back:

From the very dawn of civilization art has been a priority for humanity. Every primitive tribal society known to us includes a significant component of musical expression, usually played out in dance, instrumental and vocal idioms. Musical activity forms and shapes the 'rhythms' of everyday life, seasons, and the understanding of the spiritual dimension of every aboriginal society. The sole legacy of some cultures is the work of their artisans who painted cave walls, carved stone tablets and crafted pottery whose artistic character far exceeds the requirement of its function. In short, even when survival was an all consuming challenge, music and art exist in the center of the culture and presumably the education of those who were be charged with carrying on that culture.

Ultimately, throughout history it is the artists and musicians who we remember and who we think of when we remember a time and place in history. From the cave paintings off of San Marcos road to the music of the ages, it is the artistic achievement of preceding generations that will be remembered when the temporal power brokers, passing politicians and titans of industry have lost their influence and passed into the forgotten annals of history. Consider these pairs of names. Which do you know?

Johann August Ernesti or Johann Sebastian Bach

Filippo Maria Visconti, or Antonio Stradivari

Hieronymus von Colloredo or Wolfgang Mozart

William Congreve or Ludwig Van Beethoven

The former are leading politicians, who were often pitted against the interests of the musicians and artisans in the second column. Famous now only for their hostility and lack of support for their well beloved and treasured adversaries and for the essential arts that were created by those artists.

Why is it then that we don't place the same emphasis on our time and culture? Why do we elevate the predictably temporal and place those who will be defining markers of our culture to future generations far from the center of public awareness and support.

Consider which of these names you would consider most influential:

Lois Capps or Jim Wimmer

Marty Bloom or Jeff Peterson

If you chose the first of each pair, I suggest that history will prove you wrong. Our prioritization is like an hourglass that turns upside down as soon as the current time expires. Can we learn from history? Can we learn that music defines our culture as strongly as any other societal aspect and more so than most. Can we learn that perpetuating our musical literacy is critical to perpetuating that which is the most valuable aspect of our humanity. Will we learn that a violin-maker, such as Jim Wimmer,

will ultimately make a more profound impact on our cultural legacy than a mayor, or that a leading city musician educator's contribution to our society (like Jeff Peterson's) will likely be heralded long after a congressional representative has been forgotten. Will we ever pay a music teacher more than an elected official? Will we ever provide public offices and official cars to our violin-makers?

We lament in the quality of the music being consumed in our culture, particularly by our young citizens, and yet we ignore the process of culturing them to make better choices. Despite the erratic and often intentionally neglected music education experiences in our nation's schools our country maintains a 130 billion dollar annual music industry. An investment of this size will leave a legacy, the question is of what character?

The reason for this outpouring of musical activity, whatever its quality is that music has always expressed that which could not be expressed in any other way. It elevates our literary efforts to a higher plane. It picks up where our linguistic capacities leave off. It has often been observed that if we could effectively describe the effect of music on our condition that the music would not be necessary. We know full well, however, that we cannot, and so it is.

The historical legacy of education has taught us this and we should be listening. The ancient academies in the early days of the formation of our modern society defined the core of the educational experience as the seven liberal arts divided into two parts. One section called the Trivium, not for being trivial but rather for being of three parts consisted of Grammar, Logic and Rhetoric. These disciplines teach us how to communicate.

The second section called the quadrivium, or four parts, is made up of Arithmetic, Geometry, Music and Astronomy. These teach those things that are worth communicating. They are the core of the curriculum. They are what define our humanity. They should still be the core of the curriculum. We have crudely reduced these to the three (trivium like) R's of reading writing and arithmetic. But any serious educator should know that you cannot responsibly cut out the fourth 'R' of the quadrivium, "arts" or music any more than you can responsibly cut out the fifth 'R' of Research (or science as originally represented by Astronomy).

I have always believed that music speaks for itself and ultimately needs little help from other concerns to justify its equal place at the center of the curriculum. It is the very soul of what we aspire to be. However, the more we know about the effect of music in the mix with other curricular aspects, the more compelling the secondary arguments become.

We now know a great deal about how the brain works, and that music has a significant positive developmental impact on the brain that is unique and profound. We also know that music education has significant results in the achievement and behavior of students in the public schools.

Consider these findings from a Stanford University and Carnegie Foundation for the Advancement of Teaching study in an, Americans for the Arts Monograph, from November 1998

Students involved in arts in the curriculum are:

- Four times more likely to be recognized for academic achievement
- Three times more likely to be elected to class office within their schools
- Four times more likely to participate in a math and science fair
- Three times more likely to win an award for school attendance
- Four times more likely to win an award for writing an essay or poem

Young artists, as compared with their peers, are likely to:

- Attend music, art, and dance classes nearly three times as frequently
- Participate in youth groups nearly four times as frequently
- Read for pleasure nearly twice as often
- Perform community service more than four times as often

As a matter of fact, we have four young people from Goleta Valley Junior High School with us today (one of whom is a recent alumna) who are at this very moment participating in a youth group activity (a string quartet), performing a community service (playing their music in a public forum on music education), and who likely demonstrate all the other characteristics found in the Stanford-Carnegie study.

Camille Miller, first violin, Sofiya Pryhitko, second violin, Ray Cothorn, third violin (viola part) and Rebecca Shasberger, cello. Camille and Ray are eighth graders, Rebecca is in ninth grade, and Sofiya is a seventh grader. All study privately in addition to the work in school. Their teacher there is Jeff Peterson, I believe you have heard of him, perhaps just a few moments ago! He is the principal educator in the Santa Barbara schools string curriculum and has provided exemplary leadership in keeping the flame of music education burning in our community. Doubtless, long after you have forgotten my remarks, you will remember the playing of these young people. But that is okay, it actually pretty much proves the point of everything I have said so far. Take a break from the linguistic arguments for a moment and listen through the language of your soul.

Thank you. I firmly believe that we could stop here. Case closed. But, wait there's more. Not only did Mr. Peterson prepare these students to entertain and delight, he has also prepared them to learn. Learn, that is in an enhanced fashion, virtually every other subject in the curriculum.

As cited by Daniel Levitin in his book "This is your mind on music,"
"Studies of violin players by Thomas Elbert have shown that the region of the brain responsible for moving the left hand – the hand that requires the most precision in violin playing – increases in size as a result of practice"

Listen to this abstract of a study on the Enhanced learning of proportional math through music training and spatial-temporal training by Amy B. Graziano, Matthew Peterson and

Gordon L. Shaw from the Department of Physics and Center for the Neurobiology of Learning and Memory, University of California, Irvine, Calif., Department of Vision Science, University of California, Berkeley, Calif. and the Music Intelligence Neural Development Institute, Irvine, Calif.

“It was predicted, based on a mathematical model of the cortex, that early music training would enhance spatial-temporal reasoning. We have demonstrated that preschool children given six months of piano keyboard lessons improved dramatically on spatial-temporal reasoning while children in appropriate control groups did not improve. It was then predicted that the enhanced spatial-temporal reasoning from piano keyboard training could lead to enhanced learning of specific math concepts, in particular proportional math, which is notoriously difficult to teach using the usual language-analytic methods. We report here ... as predicted, children given piano keyboard training ... training scored significantly higher on proportional math and fractions than children given a control training ...”

Yes, better math through music.

Consider science, as examined by James R. Ponter, whose article appearing in the February, 1999 issue of the NASSP (National Association of Secondary School Principals) Bulletin reports: *“Nations whose students consistently outperform the United States in tests assessing science achievement are the countries where music is a primary focus of the curriculum. Test results cited in the 1983 report A Nation at Risk showed the United States trailing badly behind other countries in mathematics and science. A 1988 test of the International Association for the Evaluation of Educational Achievement (IAEEA) ranked the United States fourteenth among 17 countries on an instrument testing science achievement of eighth and ninth graders (AAAS, 1989). Our students’ scores compared favorably with those of Thailand and Singapore, while trailing far behind Poland, Italy, Korea, English-speaking Canada, and every other participating country, with the exception of the Philippines and Hong Kong.”*

What are these other countries doing? If we examine the top three ranked countries on the 1998 test, we see some fascinating parallels between academic achievement and music education. In a 1988 study cited by Frank Hodsoll, Chairman of the National Endowment of the Arts, he noted that in grades one through six: *“the Japanese require two class periods per week [of music]. Music includes singing, instrumental performance and appreciation of both western and Japanese music. At middle level, students learn to sing in choruses and play instruments in ensembles (DOE 1987).”*

In Dutch secondary schools, music and art became mandatory subjects in 1968 and compulsory examinations in these subjects were implemented in 1976 (Netherlands National Institute for Educational Measurement).

In Hungary, the land of Bela Bartok and Franz List, with its number one ranking in science achievement for eighth and ninth graders, music education has long been an essential and developmental music programs were implemented nationally by the composer Zoltan Kodaly. Both voice and instrumental training twice a week are

compulsory throughout the first eight years of schooling.

The centrality of music education to learning in the top-ranked countries seems to contradict the United States' focus on math, science, vocabulary, and technology.

How is this possible? It is possible, or rather inevitable when we consider how the brain functions.

According to Howard Gardner, a leading researcher in education: *“musicians follow a progression of notes, a very sequential left brain process; seeing patterns in the construction of phrases, seeing the whole for expressive phrasing and interpretations, and dealing with rhythmic patterns, on the other hand, are very right-brain skills. Additionally, mathematical abilities involved in timing, counting, and the symbolic encoding of time and sound involve abstract and spatial reasoning. All this brain activity must be consummated in the form of precise fine motor skills. Beyond all other musical activities, the playing of stringed instruments without keys or frets involves the estimation of decreasing distances down the finger board for accurate intonation. Bowing technique requires the cultivation of an intuitive sense for velocity and acceleration that may later become codified in the symbolic language of calculus. Because it draws on so many different attributes, music develops flexibility in thinking. Musical training is an effective way, not only to enhance the conceptual-holistic-creative thinking process, but also to assist in the melding and merging of the mind’s capabilities. Although most musical capabilities seem to be represented initially in the right hemisphere, as an individual becomes more skilled, capabilities that were housed in the right hemisphere are found increasingly in the left. It appears that, with musical training, a significant proportion of skills migrate across the corpus callosum into the linguistically dominant left hemisphere (Gardner, 1984). “*

Or, in other words, music is a total brain workout that both builds the capacities of logical and creative thinking and that uniquely builds bridges between the two. Hence we create scientists that are more likely to discover something new as well as artists who think and act logically.

But, does music make you smarter?

“The mental flexibility that is developed by the study of music is reflected in industrial applications. One of the most innovative and entrepreneurial centers of U.S. commerce is the Silicon Valley of California. Grant Venerable, in “The Paradox of the Silicon Savior,” says: “One of the most striking facts in Silicon Valley industry is that the very best engineers and technical designers are, nearly without exception, practicing musicians” (1989).

Physician and biologist Lewis Thomas studied the undergraduate majors of medical school applicants. He found that 66 percent of music majors who applied to medical school were admitted. This was the highest of any group, while only 44 percent of the biochemistry majors were admitted (1994).

The research emerging from the cognitive sciences gives us useful information to explain the connections between music and learning. Technology allowing us to see the human brain in the process of thinking shows us that when people listen to melodies with a variety of pitch and timbre, the right hemisphere is activated, as it is when one plays by ear or improvises. “When music is read, the player must understand key signatures, notation, and other details of scores and follow the linear sequence of notes activating the left hemisphere in the same area that is involved in analytical and mathematical thinking (Dickinson, 1993). “

This mental multi-tasking seems to enhance cognitive ability in powerful ways that we must not ignore.

Further the College Board, the entity that runs the SAT testing for our country’s college bound students consistently reports a 10 percent advantage in both verbal and math testing results for students who have been involved in music for four or more years. Ten percent may not seem like a lot, but it can easily be the difference in a college admission decision, a secondary school meeting minimal academic achievement standards, the grade of an A or B, or my ability to pay my property taxes, which equate to 10 percent of my income and go largely to fund a public education system that is increasingly diminishing the music education that provided me with the capacity earn the income that supports it. It seems like a cycle for societal destruction if not reversed.

But some would say that our schools today are struggling with such a wide range of socio economic levels and social forces. Clearly we cannot afford the luxury of music that will only serve a talented few. Again, research says that this argument is completely wrong headed. Arts involvement has a positive impact on students of all socio-economic Levels as reported in a study from the UCLA Graduate School of Education. These statistics, first released in 1997, are based on a study of over 25,000 students that were tracked for several years. The authors of the study incorporated data from students of all ethnic and economic backgrounds so the study would not be biased by those factors. The study also looked at students of low socio-economic status both as part of the entire student population and separately, to see if arts education had a significant impact upon students of low socio-economic status. Here are the results:

“SES” refers to socio-economic status.

Grade 10 Academic Performance

Scoring in top two quartiles, Grade 10 Standardized Test Composite:

All Students High Arts 72.5 percent

All Students Low Arts 45.0 percent

Low SES High Arts 41.4 percent

Low SES Low Arts 24.9 percent

Other areas of measurement showed similar patters of achievement.

Is improving the standardized test scores of low socio economic students by 17 percent (or all students by 27 percent) a desired goal? If so, then this study suggests a thorough arts curriculum as the way to accomplish it.

Building upon the pioneering work of Dr. Frances Rauscher, psychologist at the University of Wisconsin at Oshkosh, a recent study at the University of Munster in Germany revealed that practicing the piano in early childhood expands the mind, literally altering the anatomy of the brain.

According to Dr. Rauscher, musical training, specifically piano instruction appears to dramatically enhance a child's abstract thinking skills and spatial-temporal ability, skills necessary for mathematics and science, even more than computer instruction does. Those children who received piano/keyboard training performed 34 percent higher on tests measuring spatial-temporal ability than the others. The combination of these scientific findings, plus ongoing research into the field, continues to point to one conclusion: music has an obvious impact on the brain and should be supported and encouraged in early childhood education.

A report from New York reveals that the schools who produced the highest academic achievement in the United States today are spending 20 to 30 percent of the day on the arts, with special emphasis on music. Included are St. Augustine Bronx elementary school, which, as it was about to fail in 1984, implemented an intensive music program. Today 90 percent of the students are reading at or above grade level. The NY Times reported on Nov. 5, 2007: *"In 1984, as desperate families left the crime-ridden South Bronx, the Archdiocese of New York was on the verge of closing the school because of declining enrollment. The Rev. Robert Jeffers, pastor of St. Augustine's parish, and Mr. Pilecki, a professional pianist who then ran a successful after-school arts program, won Archdiocesan support when they came up with the idea of turning St. Augustine into a school for the arts. Since then, enrollment has more than doubled, test scores have soared, and there is a waiting list for admission. Almost 90 percent of the school's graduates go on to college. Creativity From Chaos."*

In the January 1997 article, "The Musical Mind", Howard Gardner was quoted as saying that music might be a special intelligence which should be viewed differently from other intelligences. He stated that musical intelligence probably carries more emotional, spiritual and cultural weight than the other intelligences. But perhaps most important, Gardner says, is that music helps some people organize the way they think and work by helping them develop in other areas, such as math, language and spatial reasoning. In a January 1997 publication, Gardner states that school districts that "lop off" music in a child's education are simply "arrogant" and unmindful of how humans have evolved with music brains and intelligences. Students are entitled to all the artistic and cultural riches the human species has created.

Students of the arts continue to outperform their non-arts peers on the SAT, according to reports by the College Entrance Examination Board. In 2005, SAT takers with coursework/experience in music performance scored 56 points higher on the verbal

portion of the test and 39 points higher on the math portion than students with no coursework or experience in the arts. Scores for those with coursework in music appreciation were 60 points higher on the verbal and 39 points higher on the math portion. Data for these reports were gathered by the Student Descriptive Questionnaire, a self-reported component of the SAT that gathers information about students' academic preparation. This equates to essentially a ten percent increase.

Well, the studies speak volumes, literally. But it also gets personal.

This past summer one of our Westmont students was driving home after our season ending orchestra tour. He suffered a near fatal car accident and lay in a comma for several weeks in intensive care. Doctors told the family that there was little hope of his recovery. He did regain consciousness, however, and while he had limited speech function he could not form cogent thoughts or recognize simple objects. Case workers predicted months or years of therapy and gave little hope for him to regain his former intellectual function. His violin professor happened to have the opportunity to drop in on him a few days after these assessments were made. When Dr. Ficsor arrived at the clinic the student was going through some tests that determined he could not recognize or name simple objects such as a spoon. And then Dr. Ficsor took out his violin and put it in the student's hand. Perplexed the student was unable to name the instrument and said he did not know what to do with it. Dr. Ficsor put the bow in his other hand and encouraged him to try. Moments later he was playing music from memory that he had studied a few months earlier. Two months later he was back in school playing drums in the Chapel Band and violin in the orchestra, taking a full academic load. Music had played what might be called a miraculous role in a recovery that was beyond the doctor's wildest imaginations. Except that it was not miraculous. It was in fact planned from the very first time that this young man began his violin studies at the age of six. It is how the brain was meant to function, and most likely only could function because the musical resources of both brain hemispheres were so strongly developed and cross linked that they could pull together when linguistic skills, which operate in only one lobe, could not. Was his high school orchestra or his parent's investment in musical studies justified?

I was struck recently by the news that a local high school football game had been moved to an afternoon kick off time to avoid having the teams meet after dark due to the risk of gang violence. How odd that on that very weekend Westmont hosted a high school choral festival at which 300 students from eight different public high schools met, mingled, ate and sang together, and cheered for each other well into the evening with no violence and much good will. You see music is motivational, not negatively competitive.

So, the research speaks clearly, the stories are legion and the evidence is overwhelming. How are we, that is the community of Santa Barbara, reacting?

The recent shocking revelations of fiscal confusion within the SB School district has revealed a system that cannot determine if it has a five million shortfall or a 2.5 million surplus (note that is a 7.5 million spread) and whose CFO resigned from a \$125,000 a year position only to be replaced by a \$1,000 a day temporary service, (the difference of which alone would pay for two full time music teachers a year). Drastic reductions to meet the now dis-proven budget shortfall included \$400,000 to music programs (through

staff reduction and the elimination of elective offerings) thus making an already skeletal and initially under funded program bear 25 percent of the district's supposedly required reductions, while the same budget, which was plagued with administrative ineptitude, features \$500,000 in increases in administrative salaries. Even when the financial picture was understood to be quite different with the discovery that the district in fact did not have a five million shortfall but rather a 2.5 million dollar surplus, the programs were not reinstated as the school board cited fears of possible future shortfalls, which of course must be mitigated by the reduction of music education program and the resultant diminishing test scores, intellectual development, social improvement and cultural awareness of our children.

We must start somewhere to address these misguided approaches to education. We should start at restoring the minimal offerings that we have historically had. This can be done simply by reducing the *increase* in classified (that is non-teaching) personnel costs by 80 percent. If there are other, more practical prioritizations, I would welcome the suggestions.

The current scenario for music education in Santa Barbara is a design whose only logical intent can be to gradually eliminate music from the instructional day. Elementary music education has been most significantly reduced. All the studies cited here and in the literature show that the younger the student the more profound and lasting the effect of the encounter with music. Further, students who have no base of instruction are far less likely to elect music in the middle and high school years than those who have had sequential and developmental opportunities in the elementary years. A report by John Langstaff and Elizabeth Mayer in the journal *Learning*, March/April 1996, presented a rationale for the importance of music education in early childhood. Noting that "by approximately age 11, neuron circuits that permit all kinds of perceptual and sensory discrimination, such as identifying pitch and rhythm, become closed off. Not using them dooms the child to be forever tone deaf and offbeat."

While course offerings have been preserved to some extent in the middle schools, student's access to them has been greatly curtailed by the elimination of class periods and the resultant limited access to electives. It almost appears as if the administration of the Santa Barbara School District is planning on the destruction of music offerings while keeping up a good front that can be used to point to earnest attempts at keeping it alive. "We offered Junior High programs, but the children did not choose to enroll" might be a future justification for further program funding reduction. Of course, with little or no junior high instruction, will the high schools be far behind? Soon we can be rid of those pesky and expensive marching bands, musical theatre productions, choirs, orchestras (what few there are) and jazz ensembles. The recently instituted International Baccalaureate music program at Dos Pueblos High School will surely be a short-lived interruption in this cost saving plan.

Misleading financial presentations and inadequate partial gestures will not do. Music instruction must be comprehensive, systematic, accessible to all, integral to the curriculum, sequential (beginning in the lower elementary grades), and not just available but required in the same fashion and with same commitment as other core subjects. The

cultural imperative is obvious, the research is clear. To ignore it is simply unacceptable and irresponsible.

In the words of David Holmes – Theatre Arts instructor at San Marcos High School:
“I believe that we are at a crossroads for the arts in public education. I believe that your efforts to advocate for the arts in your school is critical. The thing I fear most is complacency. This problem will not go away. But if you are complacent and accept that the meager offerings that are available this year is the best that this community can offer, the days of excellence in band, theatre, vocal music and dance are over. You will have contributed to the trend that accepts the mediocre as OK. We need to fight the trend and insist on excellence in our schools and from our students. Performing Arts Education is not the performance at the end of the day. Education is more than an activity. Be involved. Help create a vision for the arts in public education. Start right now in your school by making sure that your principal knows that the Arts are important to you and must be included at your school. It is not OK that in some schools band only meets a few days a week. It is not OK that vocal music is a club activity only. It is not OK that theatre arts in a trimester wheel delivers only 1/3 of the curriculum. It is not OK that a beginning band does not exist at your school. It is not OK that a performance of a play is the only theatre arts in your school. It is not OK that Jazz Band does not exist at your school. It is not OK for only one junior high in the district to have an orchestra. It is not OK that dance is not available at your school. It is not OK that vocal music is not offered at your school. Don't be OK with any of this. Your acceptance of mediocrity is not OK. Make an appointment to meet with your principal. Put this on the agenda of the PTSA. Write letters, send emails, make phone calls. Be an Advocate for the Arts in Public Education.”

Here is what I suggest. I suggest that members of the Santa Barbara community, that is most of us here, simply insist to the local school authorities, both those we pay and those we elect, that music education be a component of the core educational experience for every student at every level in the Santa Barbara School district. That every student has unrestricted access to developmentally appropriate music experiences at least 30 minutes a day, three times a week in elementary school, with an additional option for at least weekly semi-private lesson and twice weekly ensemble experiences. This would equate to a daily musical experience for every child similar to what we expect for every other core discipline. That every student in the middle, junior and senior high school environment have unfettered access to at least one music elective, that is to say one period where little else is offered or every conflicting option is offered in an alternate period so that access to the full curriculum is allowed. We insist on this for other critical aspects of the curriculum, we should do the same for music. Decide budget priorities after this is accomplished. Cut administrative salaries, allow PTA's to fund custodial services, hire grant writers, start a foundation, hold bake sales to fund extra curricular competitive sports, etc., but start here.*

*Footnote: Following active community advocacy the Santa Barbara School Board acted to reinstate several aspects of the fine arts curriculum for the 2007 – 2008 school year. On November 4, 2008 the voters of Santa Barbara passed a \$35 parcel tax (proposition

H) to fund certain math, music and theatre programs that were threatened by budget reductions in the public schools.

Bibliography:

“Involvement in the Arts and Human Development: General Involvement and Intensive Involvement in Music and Theater Arts.” by James S. Catterall, Richard Chapleau, and John Iwanga, from the UCLA Graduate School of Education & Information Studies.

"Living the Arts through Language + Learning: A Report on Community-based Youth Organizations," Shirley Brice Heath, Stanford University and Carnegie Foundation For the Advancement of Teaching, Americans for the Arts Monograph, November 1998

This Is Your Brain On Music, Daniel Levitin, Penguin Group, New York, 2006
ISBN 978-452-28852-2

An Intelligence View of Music Education, Dr. Arthur Harvey
University of Hawaii (Manoa), February 1997 issue of Leka Nu Hou, the Hawaiian Music Educators Association Bulletin

Music Educators National Conference Website

Additional Supportive Citations and References

From the Music Educators National Conference Website:

Definitions

- Linguistic intelligence: The capacity to use words effectively, orally or written.
- Logical-Mathematical Intelligence: The capacity to use numbers effectively and to reason well.
- Spatial Intelligence: The ability to perceive the visual-spatial world accurately and to perform transformations upon those perceptions.
- Bodily-Kinesthetic Intelligence: Expertise in using one's whole body to express ideas and feelings and facility in using one's hands to produce or transform things.
- Musical Intelligence: The capacity to perceive, discriminate, transform, and express musical forms.
- Interpersonal Intelligence: The ability to perceive and make distinctions in the moods, intentions, motivations, and feelings of other people.
- Intrapersonal Intelligence: Self-knowledge and the ability to act adaptively on the basis of that knowledge.

Linguistic

A study by Hall in 1952, reported that when examining 278 eighth and ninth graders, the

use of background music in study halls resulted in substantially more improvement of reading comprehension than those that studied without music.

In a study by Ramey and Frances Campbell of the University of North Carolina (as reported in “You Can Raise Your Child’s IQ” in *Readers Digest* October 1996) preschool children taught with games and songs showed an IQ advantage for 10 to 20 points over those without the songs, and at age 15 had higher reading and math scores.

Logical-Mathematical

The Council on Basic Education conducted a study comparing the amount of time spent on the arts by schools in Germany, Japan, England and the United States, and found that not only did the U.S. trail the other countries in time devoted and percentage of time devoted to arts instruction, but that the U.S. trailed countries in math and science scores.

A study in Rhode Island published in the May 23, 1996 issue of *Nature* reported that first-graders who participated in special music classes as part of an arts study saw their reading skills and math proficiency increase dramatically. Students who studied music appreciation scored 46 points higher on the math portion of the SAT in 1995, and 39 points higher if they had music performance experiences, than those without music education.

Spatial

In a study by Frances Rauscher and Gordon Shaw at the University of California, Irvine, that was presented in 1994 at the American Psychological Association, they reported that pre-schoolers who took daily 30 minute group singing lessons and a weekly 10-15 minute private keyboard lesson scored 80 percent higher in object-assembly skills than students who did not have the music lessons.

Bodily-Kinesthetic

In a report of the significance of singing in *MUSICA* Research Notes in Fall 1996 Weinberger cites research of Kalmar dealing with the positive effects of singing in normal children in a long term study, as she studied the effects of the Kodaly method of instruction, and found significant effects on motor development and cognitive development of those participating in the music program.

Musical

A report in *The New York Times International* in May 1996 indicated that in Japan, Korea, Taiwan, and China music is a more significant part of education for children than in the U.S.A., and the children in those countries are far more likely to have what some regard as one of the most striking signals of a musical mind, absolute pitch. As reported in “The Musical Mind” by Susan Black, neuromusical investigations are producing evidence that infants are born with neural mechanisms devoted exclusively to music. And perhaps, even more importantly, studies show that early and ongoing musical training

helps organize and develop children's brains.

Interpersonal

A study done in 1978 by McCarty, McElfresh, Risce and Wilson, reported that a pattern of inappropriate student behavior on a school bus was changed by playing music. Research at the Harvard Project Zero as reported by Colwell and Davidson, suggests that arts activities for all students on Fridays and Mondays reduce the absentee rate on those days.

Intrapersonal

Martha Mead Giles found in a study reported in the *Journal of Music Therapy* that music and art instruction may be an important link to children's emotional well-being. In an *Update: Applications of Research in Music Education* report, Fall/Winter 1994, research was cited that in addition to an enhancement of self-concept as an outcome of music education, trust and cooperation, empathy, and social skills were also shown to be benefits of a music education.

Research on the relationship of music and other academic areas conducted in Pawtucket RI and reported in a 1996 volume of the journal *Nautre* describes "a growing body of evidence that arts instruction can significantly strengthen students' academic performance. The latest research, involving first and second graders at two Pawtucket RI public elementary schools, produced strong evidence that sequential, skill building instruction in arts and music, integrated with the rest of the curriculum, can greatly improve children's performance in reading and math. The study was a collaborative effort of The Music School (in Providence RI), arts specialists in the Pawtucket school system, and the Kodaly Center of America.

In its first year, the study included 96 students, ages 5-7 in eight first-grade classrooms. Four "test arts" classrooms (two each in two schools) participated in a music and visual art program that emphasized sequential skill development and that integrated music and visual art with the rest of the curriculum. Students in the "test arts" classrooms received one hour of music and one hour of visual art per week. Four control classrooms (two in each school) received the school system's standard visual arts and musical training (one hour of visual arts and 45 minutes of music in alternating weeks).

After seven months, all students were given standardized first-grade Metropolitan Achievement Tests. Martin Gardiner, research director at The Music School, compared the results with kindergarten achievement test scores for the 83 percent of students for whom kindergarten scores were available. He found that, although students in the test arts classes had started behind the control students in percentage of students at or above the national average kindergarten Metropolitan Achievement Test scores, they had caught up to statistical equality in reading, and had pulled ahead in mathematics. Seventy-seven percent of those in the "test arts" classes were now at grade level or above in mathematics, as compared to 55 percent of those in the control groups.

The study was continued the following year in four “test arts” and five control classrooms in second grade at the same schools. Achievement tests were again given after seven months. As in the first year, test and control groups were equal on reading, and “test arts” pupils were ahead on math. The percentage of students at or above grade level in second-grade math was highest in those with two years of the “test arts” program, lower in those with one year, and lowest in those who no “test arts” participation.”